CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 85-133

REVISED WATER RECLAMATION REQUIREMENTS FOR:

CITY OF ST. HELENA
VINEYARD GOLF CLUB
ST. HELENA
NAPA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter called the Board) finds that:

1. The City of St. Helena presently operates a secondary sewage treatment plant consisting of a series of 5 ponds with a design capacity of 0.5 million gallons per day (MGD). Effluent from the treatment plant is disinfected prior to discharging to the Napa River, a water of the United States, during wet weather under the National Pollutant Discharge Elimination System (NPDES). The Board has adopted a separate waste discharge requirements (NPDES Permit No. CA0037575) for this discharge.

2. The City of St. Helena (hereinafter called the Producer), by application dated July 13, 1983 and supplemental technical report dated April, 1985 has proposed a reclamation project during dry weather to apply secondary treated and disinfected municipal wastewater onto an 18-hole golf course through spray irrigation. The proposed golf course site will be located adjacent to and southeast of the existing treatment plant with a net irrigation area of 87.6 acres. The Producer will purchase this land and lease it to the Vineyard Golf Club under an agreement. The City of St. Helena and the Vineyard Golf Club are hereby called the Users. Attachment A is a location map of the irrigation site and is hereby made a part of this Order.

3. Three lakes with a total capacity of approximately 17 million gallons (MG) will be built within the proposed golf course area to provide readily available irrigation supply and to provide contigency storage capacity in the event of effluent quality concerns. The lakes will be lined to minimize percolation. Aerators will be installed to produce sufficient circulation for the control of odor and mosquito breeding problem. From December 1 through April 30 of each year, the wastewater may be discharged to the Napa River from the golf course lakes as well as from the treatment ponds.

4. The reclaimed wastewater will be applied to the golf course at a controlled rate matching the grass evapotranspiration rate. The irrigation pumps will be provided with shutoff switches operated by an anemometer to prevent aerosols from leaving the site when wind velocity is high. To protect the adjacent vineyards, wastewater will not be applied to a 100-foot wide strip along the southwestern and southeastern boundaries. A separate sprinkler system using

potable well water will be installed along these boundaries to irrigate that buffer area. Vegetative screens will also be included to provide further protection.

5. The Producer, as the purveyor of the treated wastewater to the proposed golf course site, will operate and maintain the treatment plant as well as major transmission facilities.

6. The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on July 21, 1982. The water quality goals to be used in regulating water quality factors as set forth in the Basin Plan include maximum feasible reclamation or reuse of municipal, industrial, and agricultural wastewaters.

7. Section 13523 of the California Water Code provides that a Regional Board, after consulting with and receiving the recommendations of the State Department of Public Health, and if it determines such action to be necessary to protect the public health, safety, or welfare, shall prescribe water reclamation requirements for water which is used or proposed to be used as reclaimed water.

8. These water reclamation requirements are in conformance with the statewide reclamation criteria established by the State Department of Health Services as prescribed in Title 22, Section 60301 through Section 60355, California Administrative Code.

9. The City of St. Helena, on May 17 1983, certified as complete a Final Subsequent Environmental Impact Report (EIR) on the proposed water reclamation project. The EIR describes impacts and identifies mitigations for the use of reclaimed water on the golf course irrigation site shown on Attachment A.

10. The EIR states that this project could have the following adverse impacts on the environment:

    a. Public contact with wastewater at and adjacent to the storage and application sites.

    b. Public exposure to pathogens in wastewater through inhalation of contaminated aerosols resulting from spray irrigation.

    c. Pollution of surface water resulting from irrigation site runoff.

    d. Degradation of localized groundwater, and local wells and springs.

    e. Possible odors resulting from the storage and application of reclaimed wastewater.

    f. Production of nuisance midges and mosquitoes in storage ponds and at the irrigation site.

    g. Impacts on adjacent vineyards from wastewater aerosols and from a change in microclimates.

h. Possible degradation of soil.

i. Construction may possibly disrupt areas having archaeological significance.

j. Construction impacts may include dust, destruction of vegetation, noise, traffic disruption and public safety hazards.

k. Energy usage is projected to increase slightly due to wastewater pumping.

11. The following measures have been incorporated into the irrigation project design to mitigate potential adverse impacts identified in finding 10 above:

a. To prevent potential public contact with wastewater: the boundary of golf course will be fenced, and the spray irrigation is allowed only during the night or early morning.

b. To prevent aerosols from contaminating public and adjacent vineyards: low trajectory sprinkler system will be used, vegetative screens will be provided, a 100 feet wide buffer zone along the southeastern and southwestern property lines to be irrigated with potable well water will be kept, and that an anemometer will be used to stop the irrigation process when wind velocity is high.

c. To prevent potential pollution of surface water or groundwater: the reclaimed water will be applied to the golf course at controlled rate matching grass evapotranspiration rate, and adequate setback distance will be kept from the Napa River or wells.

d. To prevent potential odor problem: the wastewater will be adequately treated and disinfected prior to being applied to the irrigation field.

12. The Board finds that the potential adverse water quality and public health related impacts stemming from the City's reclamation project, as identified in the Subsequent Environmental Impact Report, will be mitigated by measures incorporated in the project design or required by this Order.

13. The Board has notified the Producer, User, and interested agencies and persons of its intent to prescribe water reclamation requirements for the proposed reuse.

14. The Board, in a public meeting, heard and considered all comments pertaining to this reuse.

IT IS HEREBY ORDERED, that the Producer and User, in order to meet the provisions contained in Division 7 of the California Water code and regulations adopted thereunder, shall comply with the following:

A. Prohibitions

1. The treatment, distribution, storage or reuse of reclaimed water shall not create a nuisance as defined in Section 13050(m) of the California Water Code.

2. Reclaimed water use shall be confined to the areas identified in Finding 2 of this Order, and shown on Attachment A, unless written authorization has been obtained from the Board's Executive Officer.

3. No reclaimed water shall be allowed to escape from the designated use area via surface flow or airborne spray.

4. Reclaimed water shall not be used as a domestic or animal water supply. There shall be no cross-connection between the potable water supply and piping containing reclaimed water. Supplementing reclaimed water with water used for domestic supply shall not be allowed except through an air-gap separation.

5. No waste shall be applied to the irrigation site during rainfall, or when soils are saturated to a point where runoff is likely.

6. Surface drainage for the areas irrigated with reclaimed water shall be directed towards the golf course lakes to prevent reclaimed water runoff from entering adjacent vineyards and the river.

7. Reclaimed wastewater shall not be applied on walkways, passing vehicles, buildings, or areas not under control of the user. Drinking fountains and picnic tables shall be protected from direct or windblown reclaimed water spray.

8. The use of reclaimed water shall not cause the degradation of groundwater suitable for domestic use or cause any change in a quality parameter which would make the groundwater less suitable for irrigation use.

9. There shall be no irrigation or impoundment of reclaimed water within 500 feet of any well used for domestic supply or 100 feet of any irrigation wells unless it can be demonstrated that special circumstances justify lesser distances to be acceptable.

D. Reclaimed Water Use Specifications

1. The Producer shall assure that the reclaimed wastewater is at all times an adequately disinfected, oxidized wastewater that meets the following quality limits at all times:

In any grab sample:

a. 5-day Biochemical Oxygen Demand	40.0 mg/l, maximum
b. Dissolved Oxygen	1.0 mg/l, minimum
c. Dissolved Sulfides	0.1 mg/l, maximum

At any point in the disinfection facilities where adequate

contact with disinfectant is assured:

d. The median number of total coliform organisms shall not exceed 23 MPN/100 ml as determined from the bacteriological results of the last seven days for which analyses have been completed, and the number of total coliform organisms shall not exceed 240 MPN/100ml in any two consecutive samples.

e. Chlorine Residue 1.0 mg/l, minimum

2. The Producer shall discontinue the diversion of reclaimed water to the User during any period in which he has reason to believe that the limits specified in B.1 above are not being met. The diversion of reclaimed water shall not be resumed until all conditions which caused the limits specified in B.1 to be violated have been corrected.

3. All equipment, including pumps, piping, valves, etc. with public access which may at any time contain reclaimed water shall be adequately and clearly identified with warning signs and the User shall make all necessary provisions, in addition, to inform the public that the liquid contained is reclaimed water and is unfit for human consumption.

4. The User of reclaimed water shall manage its application so as to minimize ponding or mosquito breeding problem.

5. Unless special circumstances warrant daytime application, irrigation shall occur at night or early morning when the wind velocity is minimal and the golfers are absent. The grounds shall have maximum opportunity to dry before use by the public. The golf course operator shall obtain approval from the Regional Board before any daytime application of reclaimed wastewater can be done.

6. Areas with public access irrigated with reclaimed water shall be fenced. Adequate means of notification shall be provided to inform the public that reclaimed water is being used. Conspicuous warning signs with proper wording of sufficient size to be clearly read shall be posted at adequate intervals around the use area. Warning signs around the three storage lakes shall also be posted as such.

7. At golf course, notices shall be printed on score cards stating that reclaimed water is used, and all health hazards containing reclaimed water shall be posted with warning signs.

8. A minimum setback distance of 100 feet shall be kept at all time along the Napa River banks and the property lines bordering adjacent vineyards.

9. The golf course shall be carefully planned and graded to prevent runoff from escaping the designated irrigation site.

10. There shall be at least a 10-foot horizontal and 1-foot vertical separation (with the domestic water above the reclaimed water pipeline) between all pipelines transporting reclaimed water and those transporting domestic water.

C. Provisions

1. The Producer shall comply with a Self-Monitoring Program as ordered by the Executive Officer.

2. The Producer and User shall permit the Board or its authorized representatives in accordance with California Water Code Section 13267(c):

   (a) Entry upon premises in which an effluent source is located or in which any required records are kept.

   (b) Access to copy any records required to be kept under terms and conditions of this Order.

   (c) Inspection of any monitoring equipment or method required by this Order.

   (d) Sampling of any discharge and reclaimed water.

3. The Producer and User shall maintain in good working order and operate, as efficiently as possible, any facility or control system installed by the User to achieve compliance with the water reclamation requirements.

4. A contigency plan shall be developed outlining the action to be taken in the event effluent quality fails to meet required standards. The plan must be submitted for review, to the satisfaction of the Executive Officer, prior to the startup of the irrigation operation.

5. In the event of any change in control or ownership of land or water reclamation facilities presently owned or controlled by the Producer and/or User, the Producer and/or User shall notify the succeeding owner or operator of the existence of this Order by a letter, a copy of which shall be forwarded to this Board.

6. The Producer and User shall file with the Regional Board a report on waste discharge at least 180 days before making any material change or proposed change in the character, location, or volume of the reuse, except for emergency conditions in which case the Board shall be notified.

7. The Board will review this Order periodically and may revise the requirements when necessary.

8. After notice and opportunity for a hearing, this Order may be terminated or modified for cause, including, but not limited to:

   (a) Violation of any term or condition contained in this Order;

(b) Obtaining this Order by misrepresentation, or failure to disclose fully all relevant facts; and

(c) A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized reuse.

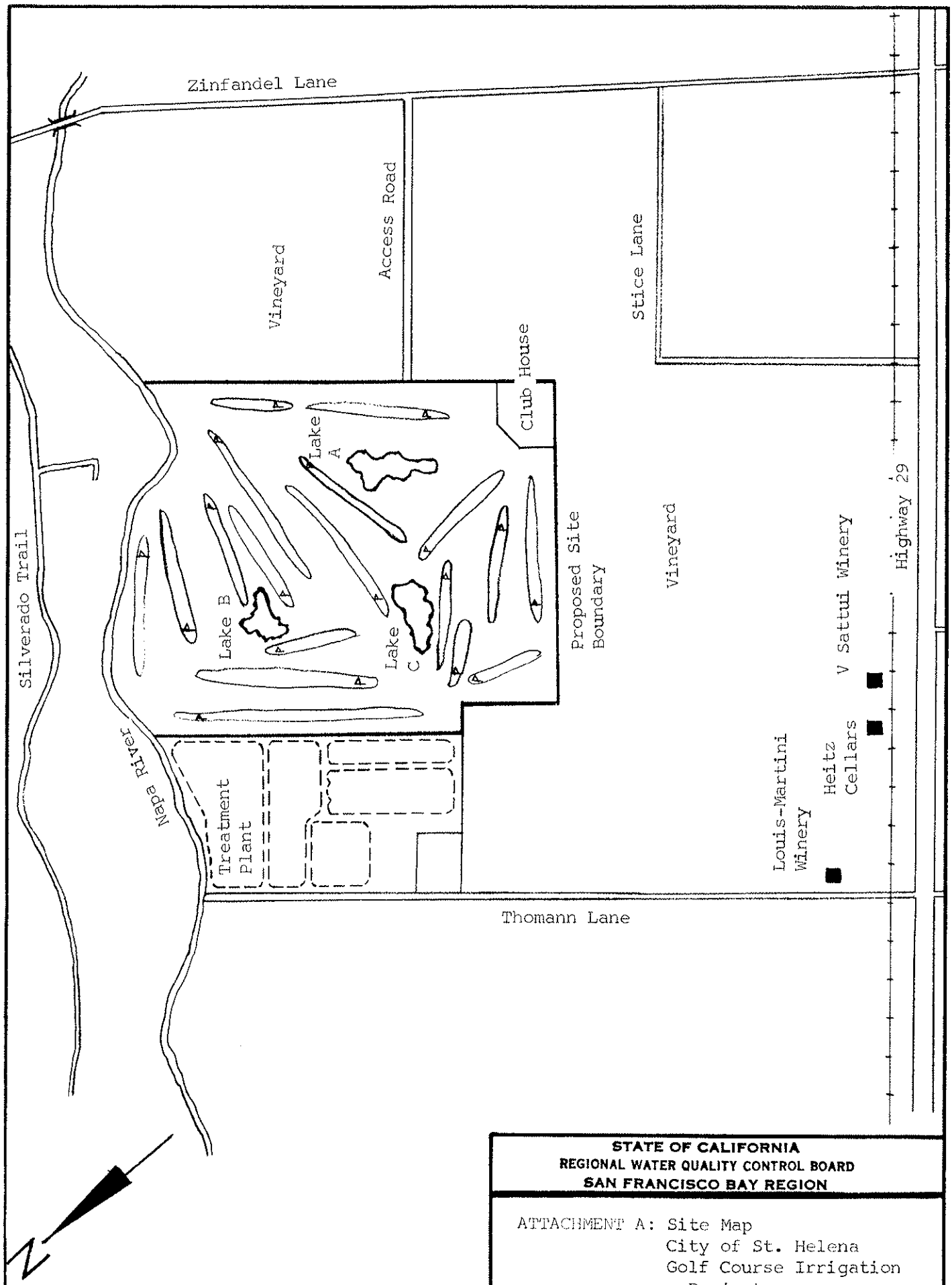
9. The golf course operator shall monitor the irrigation system performance with respect to wind velocity and direction to develop an operating envelop within which the irrigation system can operate without spray escaping from the site.

10. The water reclamation requirements previously prescribed by the Board in Order No. 83-27 is no longer applicable. Order No. 83-27 is hereby rescinded.

I, Roger B. James, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on November 20, 1985.

Lawrence P Kolb
for
ROGER B. JAMES
Executive Officer

Attachments:
Location Map
Self-Monitoring Program



STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ATTACHMENT A: Site Map
City of St. Helena
Golf Course Irrigation
Project
Napa County

DRAWN BY:	DATE:	DRWG. NO.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

FINAL

SELF-MONITORING PROGRAM

FOR

CITY OF ST. HELENA

GOLF COURSE RECLAMATION PROJECT

NAPA COUNTY

ORDER NO. 85-133

CONSISTS OF

PART A

PART A

I. GENERAL

Reporting responsibilities of waste dischargers are specified in Sections 13225(a), 13267(b), 13268, 13383, and 13387(b) of the California Water Code and this Regional Board's Resolution No. 73-16.

The principal purposes of a monitoring program by a waste discharger or reclaimed water user, also referred to as a self-monitoring program, are:

1. To document compliance with waste discharge or water reclamation requirements and prohibitions established by the Regional Board.

2. To facilitate self-policing by the waste discharger or reclaimed water user in the prevention and abatement of pollution arising from waste discharge or water reclamation.

II. SAMPLING AND ANALYTICAL METHODS

Sample collection, storage, and analyses shall be performed according to the latest edition of "Standard Methods for the Examination of Water and Wastewater" prepared and published jointly by the American Public Health Association, American Water Works Association, and Water Pollution Control Federation, or other methods approved and specified by the Executive Officer of this Regional Board.

Water and waste analyses shall be performed by a laboratory approved for these analyses by the State Department of Health or a laboratory approved by the Executive Officer. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his laboratory and shall sign all reports of such work submitted to the Regional Board.

All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements.

III. DEFINITION OF TERMS

1. A grab sample is defined as an individual sample collected in fewer than 15 minutes.

2. Standard Observations

   a. Land Retention or Pond Area

      This applies both to liquid and solid wastes confined or unconfined.

      (1) Determine height of the freeboard at lowest point of

dikes confining liquid wastes.

(2) Evidence of leaching liquid from area of confinement and estimated size of affected area. (Show affected area on a sketch.)

(3) Odor: presence or absence, characterization, source, and distance of travel.

(4) Estimated number of waterfowl and other water-associated birds in the pond area and vicinity.

b. Periphery of Spray Irrigation Site

(1) Evidence of reclaimed wastewater escaping the irrigation site through surface runoff or airborne spray. (Show affected area on a sketch.)

(2) Odor: presence or absence, characterization, source, and distance of travel.

(3) Evidence of surfacing or ponding of reclaimed water as well as mosquitoes breeding within the irrigation area due to excessive spray.

(4) Warning signs or notices adequately posted to inform public that the water used for irrigation is reclaimed waste.

IV. DESCRIPTION OF SAMPLING STATIONS AND SCHEDULE OF SAMPLING, ANALYSIS AND OBSERVATIONS

1. DESCRIPTION OF SAMPLING STATIONS

a. EFFLUENT

Station	Description
E-001	Located at any point in the effluent from pond No. 5 before being pumped to the golf course lakes. (May be the same as E-001-D)
E-001-D	Located at any point in the disinfection facilities at which point adequate contact with the disinfectant is assured.

b. STORAGE PONDS

Station	Description

P-1 thru P-5	Located at any point in the treatment ponds No. 4 and 5, and three golf course lakes within one foot of the water surface and no less than three feet from the bank, representative of the wastewater.

c. LAND OBSERVATION

Station	Description
L-1 thru L-'n'	Located at ends and midpoints of the perimeter levees of the oxidation ponds.
I-1 thru I-'n'	Located at points spaced equidistantly around the periphery of the spray irrigation area. Points shall be separated by not more than 1000 feet. A sketch showing the stations shall be submitted with the first monitoring report and subsequent self-monitoring report when station location is changed or a violation is noted.

d. GROUNDWATER

Station	Description
G-1 and G-2	Located within the two existing wells at the irrigation site to be used as part of the irrigation source.
G-3	A monitoring well to be located near the southern corner of the golf course site.

2. SCHEDULE OF SAMPLING, ANALYSIS, AND OBSERVATIONS

a. This self-monitoring program is applicable when wastewater is reclaimed for irrigation.

b. The Producer and User are required to perform observations, sampling, and analyses according to the schedule given in Table 1. (Attachment A)

V. REPORTS TO BE FILED WITH THE REGIONAL BOARD

1. Violation of Requirements:

In the event the Producer or the User are unable to comply with

the conditions of the water reclamation requirements and prohibitions due to:

(a) maintenance work, power failure, or breakdown of waste treatment equipment, or

(b) accidents caused by human error or negligence, or

(c) other causes such as acts of nature,

the Producer or the User shall notify the Regional Board office by telephone as soon as he or his agents have knowledge of the incident and confirm this notification in writing within two weeks of the telephone notification. The written report shall include pertinent information explaining reasons for the non-compliance and shall indicate what steps were taken to prevent the problems from recurring.

2. Self-Monitoring Reports

Written reports shall be filed regularly for each calender month by the fifteenth day of the following month. The reports shall be comprised of the following:

a. Letter of Transmittal:

A letter transmitting self-monitoring reports should accompany each report. Such a letter shall include a discussion of requirement violations found during the past month and actions taken or planned for correcting violations, such as operation modifications and/or facilities expansion. If the Producer or User has previously submitted a detailed time schedule for correcting requirement violations, a reference to the correspondence transmitting such schedule will be satisfactory. The letter shall contain a statement by the official, under penalty of perjury, that to the best of the signer's knowledge the report is true and correct.

b. Results of Analyses and Observations

Tabulations of the results from each required analysis and/or observations specified in Table I by date, time, type of sample, and station.

c. List of Approved Analyses

(1) Listing of analyses for which the Producer is approved by the State Department of Health.

(2) List of analyses performed for the Producer by another approved laboratory (and copies of reports signed by the laboratory director of that laboratory shall also be submitted as part of the report).

I, Roger B. James, Executive Officer, do hereby certify that the

foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with the Water Reclamation Requirements established in Regional Board Order No. 85-133.

2. Is effective on the date shown below.

3. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the Producer or Users, and revisions will be ordered by the Executive Officer.

ROGER B. JAMES
Executive Officer

Effective Date: 11/21/85

Attachments:
A. Table I
B. User's Self-Monitoring Report Form

ATTACHMENT A

TABLE I

SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSES

SAMPLING STATIONS	E-001	E-001-D	P-1 thru P-5	L-1 thru L-'n'	I-1 thru I-'n'	G-1 thru G-3
Type of Samples	G	G	G	O	O	G
Flow Rate, (MGD)	D					
5-day Biochemical Oxygen Demand	2W					
pH, (unit)	2W		M			
Dissolved Oxygen, (mg/l)	2W		M			
Dissolved Sulfides, (mg/l), (1)	2W		M			
Settleable Matter, (ml/l-hr)	2W					
Chlorine Residual, (mg/l)		D				
Total Coliform, (MPN/100 ml)		D				M
Total Dissolved Solids, (mg/l)						M
Nitrate, (mg/l)						M
Applicable Standard Observations	2W			W	W (2)	

LEGEND FOR TABLE

G= Grab sample,
O= Observation,
D= Daily,
W= Once each week,
2W= Every two weeks,
M= Monthly,

Notes:

(1). Analyze for this item only when Dissolved Oxygen is below 2.0 mg/l.

(2). The User shall perform the designated observations and file the User's Report in Attachment B as part of the Self-Monitoring Report and transmitted with the Producer's monthly Self-Monitoring Report. The observation must be made during the period when reclaimed wastewater is being used for irrigation.

ATTACHMENT B

User's Self-Monitoring Report

1. Name of User: _____

2. Month and Year: _____

3. Circle dates that Reclaimed water being used: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

4. Total gallons used for the month: _____

5. Required weekly observations: (Fill in the date of the inspection and write "yes" or "no" for each observation.)

Date and Time					
Observed Escape of Wastewater from the Irrigation Site by Surface Flow or Airborne Spray					
Wastewater Used on Unauthorized Areas					
Odor from Wastewater					
Mosquitoes Breeding Resulted from Wastewater Ponding					
Warning Signs Properly Posted					
Public Contact with Wastewater					
Vegetative Screen provided					
Automatic Shutoff switch being Tested and Functioned Properly					

If any of the observations were yes, a written report containing the following information shall be submitted:

(1) State time when noted violation(s) was observed and show its location on a map.
(2) Explain cause and extent of violation(s) observed.
(3) Describe corrective action taken and the dates compliance was achieved and irrigation was resumed.

6. I certify that the information in this report, to the best of my knowledge, is true and correct.

_____ _____
Signature of User Date